

## **MATERIAL SAFETY DATA SHEET**

### **AMMONIUM DICHROMATE**

**Extra Pure**

**(Ammonium Bichromate)**

**MSDS CAS: 7789-09-5**

#### **Section 1: Chemical Product and Company Identification**

##### **Section 1: Chemical Product**

**Product Name:** Ammonium Dichromate

**CAS#:** 7789-09-5

**C.I. No.:** Not applicable.

**Synonym:** Ammonium Bichromate; Dichromic acid, diammonium salt

**Chemical Name:** Ammonium Dichromate

**Chemical Formula:**  $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$

**Brand:** OXFORD

##### **Details Of The Supplier Of The Safety Data Sheet:**

**Company identification:**      **OXFORD LAB FINE CHEM LLP**  
Unit. No. 12, 1st Floor, Neminath Industrial Estate No. 6,  
Navghar, Vasai (East). Palghar - 401 210.  
Mumbai, Maharashtra, INDIA.  
Tel: 91-250-2390989  
Tel/Fax: 91-250-2390032

#### **Section 2: Composition and Information on Ingredients**

##### **Composition:**

| Name                | CAS #     | % by Weight |
|---------------------|-----------|-------------|
| Ammonium Dichromate | 7789-09-5 | 100         |

**Toxicological Data on Ingredients:** Ammonium Dichromate LD50: Not available. LC50: Not available.

## Section 3: Hazards Identification

**Potential Acute Health Effects:** Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death.

**Potential Chronic Health Effects:** Hazardous in case of skin contact (permeator). **CARCINOGENIC EFFECTS:** Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. **MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not available. The substance may be toxic to blood, kidneys, liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

## Section 4: First Aid Measures

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Serious Ingestion:** Not available.

## Section 5: Fire and Explosion Data

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** 190°C (374°F)

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** Some metallic oxides.

**Fire Hazards in Presence of Various Substances:** Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances:** Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

**Fire Fighting Media and Instructions:** Oxidizing material. Do not use water jet. Use flooding quantities of water. Avoid contact with organic materials.

**Special Remarks on Fire Hazards:** May ignite by friction with carbide. In contact with substances which are readily oxidized, these can react rapidly enough to cause ignition.

**Special Remarks on Explosion Hazards:** Hydrazine is decomposed explosively by chromates. With finely divided oxidizable substances, combustion can be violent. Closed containers readily rupture at decomposition temperature.

## Section 6: Accidental Release Measures

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

**Large Spill:** Oxidizing material. Poisonous solid. Stop leak if without risk. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

**Precautions:** Keep locked up.. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material... Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice

## Section 7: Handling and Storage (Continued)

Immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as combustible materials, organic materials, acids, alkalis.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Do not store above 24°C (75.2°F).

## Section 8: Exposure Controls/Personal Protection

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** TWA: 0.05 (mg (Cr)/m) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid. (Crystals solid.)

|                      |                     |
|----------------------|---------------------|
| Odor                 | : Odorless.         |
| Taste                | : Not available.    |
| Molecular Weight     | : 252.1 g/mole      |
| Color                | : Orange. Red.      |
| pH (1% soln/water)   | : 3.95 [Acidic.]    |
| Boiling Point        | : Not available.    |
| Melting Point        | : Not available.    |
| Flash Point          | : Not available.    |
| Critical Temperature | : Not available.    |
| Specific Gravity     | : 2.155 (Water = 1) |

## Section 9: Physical and Chemical Properties (Continued)

|                        |                                                                               |
|------------------------|-------------------------------------------------------------------------------|
| Vapor Pressure         | : Not applicable                                                              |
| Vapor Density          | : 8.7(Air = 1)                                                                |
| Volatility             | : Not available.                                                              |
| Odor Threshold         | : Not available.                                                              |
| Water/Oil Dist. Coeff. | : Not available                                                               |
| Ionicity (in Water)    | : Not available.                                                              |
| Dispersion Properties  | : See solubility in water.                                                    |
| Solubility             | : Soluble in cold water, hot water. Insoluble in acetone. Soluble in alcohol. |

## Section 10: Stability and Reactivity Data

**Stability:** Unstable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat and incompatible materials.

**Incompatibility with various substances:** Reactive with combustible materials, organic materials, acids, alkalis. Slightly reactive to reactive with moisture.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:** It is an oxidizing material and combustible solid. Decomposes vigorously with luminescence around 200 C. Decomposes at about 180 C. Decomposition becomes self-sustaining at about 225 C with swelling and evolution of heat and nitrogen. It is incompatible with combustible, organic, or other readily oxidizable materials: Paper, wood, sulfur, aluminum, plastics, acids, bases, potassium chlorate, sodium nitrite, alcohols, ethylene glycol, and water.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Inhalation. Ingestion.

**Toxicity to Animals:** LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:** CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: blood, kidneys, liver.

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

## Section 11: Toxicological Information (Continued)

**Special Remarks on Toxicity to Animals:** Lowest Published Lethal Dose LDL [Child] - Route: Oral; Dose: 99 mg/kg

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:** Acute Potential Health Effects: Skin: Causes skin irritation. May be absorbed through skin Eyes: Causes eye irritation. Inhalation: Causes respiratory tract and mucous membrane irritation. It may be destructive to the tissues of the mucous membranes Ingestion: May cause intense gastrointestinal tract irritation. May affect blood, Kidneys (urinary system), and liver. Symptoms of acute poisoning may include ulceration and corrosion, epigastric pain, nausea, vomiting, diarrhea, vertigo, fever, muscle cramps, hemorrhagic diathesis, toxic nephritis, renal failure, intravascular hemolysis, circulatory collapse, liver damage, peripheral vascular collapse, acute multisystem shock and coma, and even death depending on the dose. Chronic Potential Health Effects: Chronic poisoning usually results from inhalation or skin contact. May affect the blood, kidneys and liver. Signs and symptoms may include lacrimation, dermatitis, penetrating ulcers, perforation of nasal septum, pulmonary edema, congestion, chronic rhinitis, polyps of the upper respiratory tract, inflammation of the lung, emphysema, tracheitis, bronchitis, pharyngitis, adhesions of the diaphragm, inflammation of larynx, conjunctivitis, loss of appetite, nausea, vomiting, inflammation of liver or even acute hepatitis with jaundice, respiratory irritations, leukocytosis, leukopenia, monocytosis, and eosinophilia.

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:** Possibly hazardous short/long term degradation products are to be expected.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:** Waste must be disposed of in accordance with federal, state and local environmental control regulations.



## Section 14: Transport Information

### Land transport (ADR-RID)

Proper shipping name : AMMONIUM DICHROMATE  
UN N° : 1439  
H.I. nr : 50  
ADR – Class : 5.1

### Sea transport (IMDG) [English only]

Proper shipping name : AMMONIUM DICHROMATE  
UN N° : 1439  
IMO-IMDG - Class or division: 5.1: Oxidizing substances.  
IMO-IMDG - Packing group: II

### Air transport (ICAO-IATA) [English only]

Proper shipping name : AMMONIUM DICHROMATE  
UN N° : 1439  
IATA - Class or division: 5.1: Oxidizing substances.  
IATA - Packing group : II

## Section 15: Other Regulatory Information

**Federal and State Regulations:** California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Ammonium dichromate California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Ammonium dichromate Connecticut hazardous material survey.: Ammonium dichromate Illinois chemical safety act: Ammonium dichromate New York release reporting list: Ammonium dichromate Rhode Island RTK hazardous substances: Ammonium dichromate Pennsylvania RTK: Ammonium dichromate Massachusetts RTK: Ammonium dichromate Massachusetts spill list: Ammonium dichromate New Jersey: Ammonium dichromate New Jersey spill list: Ammonium dichromate Louisiana spill reporting: Ammonium dichromate California Director's List of Hazardous Substances: Ammonium dichromate TSCA 8(b) inventory: Ammonium dichromate CERCLA: Hazardous substances.: Ammonium dichromate: 10 lbs. (4.536 kg)

## Section 15: Other Regulatory Information (Continued)

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. Inventory lists for China, Japan, Korea, and Philippines.

### **Other Classifications:**

**WHMIS (Canada):** CLASS C: Oxidizing material. CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

### **DSCL (EEC):**

R8- Contact with combustible material may cause fire. R21- Harmful in contact with skin. R25- Toxic if swallowed. R26- Very toxic by inhalation. R37/38- Irritating to respiratory system and skin. R41- Risk of serious damage to eyes. R43- May cause sensitization by skin contact. R45- May cause cancer. R46- May cause heritable genetic damage. S2- Keep out of the reach of children. S46- If swallowed, seek medical advice immediately and show this container or label. S53- Avoid exposure – obtain special instructions before use.

### **HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 1

**Reactivity:** 1

**Personal Protection:** E

**National Fire Protection Association (U.S.A.):**

**Health:** 2

**Flammability:** 1

**Reactivity:** 1

**Specific hazard:**

**Protective Equipment:** Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

## Section 16 - Additional Information

**References:** Not available.

**Other Special Considerations:** Not available.



## ***Disclaimer:***

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The information contained herein in good faith but makes no representations as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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